Commitment to open standards and multi-vendor solution perspectives

IBM Global Services has deployed extensive solutions for education and commercial clients to solve a wide range of business and instructional requirements. In each case, one of the most important requirements has been for the solutions to support industry-recognized standards and to be completely open and nonproprietary. The industry-standard requirement gives clients access to the greatest amount of technical skills and talent, the best investment protection available, and maximum flexibility to work with any and all vendors / suppliers of technology to meet their requirements. IBM Global Services is completely vendor-neutral when it comes to selection of products and services to meet our clients' needs.

1.1 Video Solution overview

In this proposal, IBM will offer a Video Solution that addresses the EPISD requirement "to allow remotely-located students and/or the lecturer to participate interactively with a class at another remote location".

IBM's solution uses technology to deliver education to the classroom, and that will take advantage of video technology that allows remote instruction and collaboration, video broadcasting and on-demand video viewing at the desktop. The solution includes the capability to:

a. Distribute audio and video signals to the PC desktop via the existing network infrastructure;

b. Utilize current network connectivity;

c. Enable the user to interactively participate in geographically disbursed classes;

d. Have the desktop user selectively view videos on demand from various remote locations;

e. Have the desktop control the display of the video information across the existing infrastructure;

f. Provide versatile network infrastructure for increased video classrooms.

IBM's Video Solution will address these requirements and will position EPISD to further leverage the current infrastructure of EPISD's Internet platform by implementing a solution that is designed around the Cisco Architecture for Video and Integrated Data. This architecture supports the convergence of Video, and Integrated Data onto a common infrastructure.

Characteristics of The IBM Video Solution

The IBM Video Solution will provide students and teachers with easy to use, on-demand access to video functions that enhance the current learning environment. IBM will implement and operate video components, service and support that will allow the students and educators to focus on using and leveraging the video solution, not worrying about administering or maintaining its' components. The proposed Internet based video solution that IBM will implement and operate is consistent with the EPISD's goal of all students and teachers having universal access to effective information technology in their classrooms and schools.

This solution consists of video group and desktop equipment, video codec, EMMI, control equipment and installation and maintenance of the products. After installation of these components, EPISD will

Robust Video Processing and Delivery Throughout The EPISD System -

The IBM Video Solution is an offering that accommodates three prevalent types of video distribution to the EPISD teaching locations: Video on Demand, Broadcast Video, and Videoconferencing. These three video types offer flexibility in determining the timing, delivery and opportunity for audience participation in the video event:

Video On Demand – This is one-way, streamed video. It enables a distance learner to access educational content that is stored on a video server. The content may be a recording of a regularly scheduled lecture that a student could not physically attend or a program that was recorded for the purpose of later viewing over the network as part of a standard course work.

Broadcast Video – This is also one-way, streamed video, except that it will connect one video source to many video viewers. Just like distance learning, it enables a teacher to simultaneously reach any number of learners located throughout the network. The broadcast may come from a camera that is capturing a lecture in progress, or a live feed from cable or satellite into a broadcast server. Or, it could be stored content that is broadcast over the network at a specific time.

Videoconferencing – This is real-time, two-way interactive video. It is the only way to truly approximate the classroom environment in a dispersed environment. Video cameras must be employed at all points of the video conference in order for the two-way interaction to occur. The network must also support real-time transfer in both directions. Videoconferencing enables virtual meetings and facilitates the dynamics of interpersonal communication that occurs in face-to-face meetings, even though the participants may be miles away. Videoconferencing is one of the most effective distance learning tools for collaboration, group discussions and Q&A interaction with teachers and/or students.

Future Video Trends – Currently, in limited use, this technology supports very high quality video delivery at speeds considerably higher than conventional video. The quality is sufficient that it is being used to transmit in-progress surgical procedures to remotely located medical teams. The quality of video conference meeting is also greatly enhanced over current solutions. The IBM solution positions EPISD to deploy this technology as it becomes a requirement and as the technology becomes more affordable.

Implementation of IBM Video Solution -

IBM will partner with EPISD professionals to implement the End-to-End Video Solution for an Interactive Video solution. Additionally, IBM will administer, operate and support the video solution for EPISD for a period of one year.

Key activities that IBM will perform include:

Finalize Solution Design – Because of the current partnership with the EPISD, IBM has a good understanding of the video solution requirements established for the teaching various locations within the EPISD system. IBM will further partner with the EPISD to review and update the requirements for the EPISD video solution to ensure that the proposed solution can accommodate the current requirements.

Develop Support and Service Plan for IBM Video Solution – IBM will team with EPISD to develop the Service and Support requirements for the IBM solution. These requirements will be based on EPISD needs and goals. Where possible, existing support and service processes, tools and organization will be leveraged. Metrics to measure and report the quality of the service delivery to EPISD will be developed. Additionally, the Support and Service Plan will define the processes for coordinating and operating the solution.

Develop the Implementation Plan – IBM professionals will provide documentation to implement the IBM Video Solution in the EPISD environment. The plan will include installation of the components in 90 EPISD locations.

Implement the IBM Video Solution – IBM Specialists will team with EPISD to execute the Implementation Plan and make the IBM Video Solution operational in the EPISD locations. At the completion of the Implementation Plan, the IBM Video Solution will be operational in the EPISD

Ongoing Support and Maintenance for the IBM Video Solution – IBM Specialists will provide support and maintenance for the IBM Video Solution for a period of one (1) year. This activity will include system rearrangement tasks, problem determination and resolution, call setup, interfacing with EPISD video users to assist in resolving operational issues and interfacing with vendors providing the solution components. A dedicated support staff (3) will be assigned to EPISD to ensure proper coverage.

Advantages of the IBM Video Solution

Advantages to the EPISD Student –

Several features, inherent in multimedia-based learning, help the student learn faster and retain what is learned:

Reduced learning time – Because video makes such an impact on the learning process, reduced times in the range of 30 to 40 percent have been achieved compared to classroom instruction.

On-demand learning – Instruction is available when and where the student needs it. No waiting for, or travel to a scheduled class. Increases access to learning for the disabled, convalescing, parents and others.

Enhanced motivation – Students that have experienced technology based interactive learning report that it is more interesting and enjoyable than typical classroom lectures.

Increased achievement – When corrective feedback or a mastery learning strategy is provided, students often show better test results, retention and performance from technology interactive learning.

Learner controlled – Each student can review topics or skip past information they have already reviewed. No one has to wait for the slowest student; students can learn at their own pace.

Better Access to specialized expertise – Students can consult with experts at distant locations without having to incur the lost of time and/or expense of travel.

Advantages To The EPISD Educator –

By using the IBM Video Solution educators will be able to provide better quality education in the same amount of time and be able to deliver it to a broader audience:

Better quality control – Because learning experiences are delivered in the same way each time, they are often more consistent and reliable than classroom instruction.

Greater flexibility – Fluctuations in the number of students or their backgrounds can be accommodated more easily than with classroom instruction.

Improved accountability – Automatic collection of data on student performance is easy to gather and administer and can verify learning accomplished and/or learning problems.

Faster revision – Changes and updates to information can be made immediately.

Reduced delivery costs – Once developed, technology-based interactive learning is likely to be less expensive relative to labor-intensive classroom instruction. In addition, less experienced teachers may be able to teach more advanced topics.

Access to broader audience – Schools can attract students outside of their local communities and sell educational services to businesses in order to generate additional revenue.

Fewer resources required per student – One teacher could reach many more students located at multiple sites. This enables better scheduling of scarce resources.

Broader curriculum – By leveraging the expert resources of other educational establishments, schools can offer a broader curriculum to their students.

Advantages to curriculum delivery –

The IBM Video Solution is deployed throughout North America and is being used to augment classic

Teaching Class To Remote Sites – The IBM Video Solution is currently being used to teach to remote classrooms with all participants being able to see and hear each other "real time" as if they were in the same physical classroom.

Specialized Curriculum – The solution is being used to deliver foreign language, music, advanced math classes and other courseware to rural and urban schools that cannot afford dedicated staff.

Virtual Field Trips – The solution is being used to take students on virtual field trips to locations such as the Smithsonian Institute, NASA and major colleges and universities.

Virtual Campuses – This solution is being used to connect college and university campuses to share resources toward the creation of a virtual campus.

Professional Development – The IBM Video Solution is being used to train teachers, students and staff nurses for general professional development.

Staff Conferencing – This solution is being used to allow Superintendents, Principals and other Educational Staff to hold meetings without ever having to leave their building.

Teacher Shortages – This solution is helping school districts to address the serious problem of teacher shortages so that they can continue to offer a full curriculum.

Homebound Students & Parent Teacher Interaction – This solution can be used to connect homebound students and their parents to their local schools. Especially important for special need, critical care students and students that are being home-schooled.

IBM's Project Approach

The approach that IBM will take and the methodologies that IBM will use for this project have been in use for over 20 years. They have been field-proven and updated on many implementations projects in multiple industries, including education. Several of the key activities include:

A. Reverify EPISD Video Solution Requirements – In this activity the IBM Team will meet with EPISD Team to review and update the District's Video Solution Requirements to ensure that new requirements are included and obsolete requirements are discarded. The set of requirements that result will be used to refine the video solution and prepare for the solution design activity.

B. Video Solution Design Review and Implementation Plan Creation – In this activity the IBM Team will modify the initial video solution design as appropriate and develop guide for implementing the solutions. The design and implementation plan will be reviewed with EPISD professionals to ensure that it will meet their needs and schedule. After EPISD and IBM have agreed on the implementation plan, a detailed Project Plan will be created.

C. End-to-End Video Solution Implementation – In this activity, the IBM Team will collaborate with the EPISD Team to rollout the video solution components to EPISD classroom and staff locations.

D. Implementation Teaming – In this activity, the IBM Team will collaborate with the EPISD Team to ensure that the status of the project is known to the participants on a timely schedule, to make sure that the project tracks according to plan, to ensure that the proper resources are dedicated to the project at all times, and to facilitate an on-time delivery.

This Statement of Work (called "SOW") defines the scope of work to be accomplished by IBM under the terms and conditions of the *IBM Customer Agreement (Agreement)*, or any equivalent. The tasks to be performed by IBM are defined and an Estimated Schedule is provided. In addition, the responsibilities of the El Paso Independent School District are listed.

Changes to the Statement of Work will be processed in accordance with the procedure described in "Project Change Control Procedure". The investigation and the implementation of changes may result in modifications to the Estimated Schedule, Charges, or other terms of this Statement of Work.

The following are incorporated in and made part of this Statement of Work:

- Appendix A - Project Change Control Procedure
- Appendix B - Deliverable/Documentation Guidelines
- Appendix C - IBM Video Solution Description
- Appendix D - Video Equipment components for the delivery of Video Conferencing.
- Appendix E - Signature Document

2.1 Project Scope

We will provide a Video Solution and Installation Services to create a Design, Implementation Plan, and Implementation / Validation for your video solutions deployment. This deployment will provide the up to ninety (90) school district sites in this SOW, the capability of:

1. Video On Demand – Using Cisco Systems, Inc.
2. IP/TV Product Suite Video Broadcast – Using Cisco Systems, Inc.
3. IP/TV Product Suite Video Conferencing – Using Broadband Networks, Inc. (BNI), PowerPlay™ Product Suite

Descriptions of the above video capabilities can be found in Appendix C.

IBM will implement the design and then validate the operation of the new video environment.

To provide the video solution capabilities required by EPISD, IBM will:

- provide the overall coordination;
- install the Cisco equipment to be used for Video Broadcast and Video On Demand facilities as noted in this document;
- engage a subcontractor to install and integrate the BNI equipment used for the Video Conferencing facilities
- provide On-call Maintenance as required.

2.2 Key Assumptions

This Statement of Work, including charges and schedule estimates, is based on the key assumptions documented within this section. Any changes to these assumptions or other assumptions listed within this SOW, will be processed in accordance with the Project Change Control Procedure in Appendix A.

1. EPISD will provide suitable office space for the Video team. Desk space, telephones, LAN connections and storage space to properly support the Scope of Work (SOW) should be made available prior to the start of this project.
2. IBM will provide Services under this Statement of Work during normal business hours, 8:00am to 5:00pm (local time) Monday through Friday, except IBM holidays, unless otherwise specified.
3. Some IBM activities on this project may be performed on IBM premises.
4. Some of the Services may be performed by an IBM subcontractor.

5. This SOW assumes that the El Paso Independent School District network infrastructure will support the Cisco IP/TV Architecture.
6. This Response contains products that are not manufactured by IBM. All non-IBM products must comply with IBM's Product Safety Approval standards. Should IBM deem that any of the proposed non-IBM products do not meet IBM's Product Safety Approval standards, IBM reserves the right to substitute alternative products as available at equal or better quality subject to EPISD coordination.
7. Each school's backbone shall be gigabit Ethernet running over 50m multi-mode fiber
8. Each school shall have a single Main Distribution Facility (MDF) and may have one or more Telecommunications Closets (TC's). These spaces and their connecting fiber shall provide the building backbone.
9. MDF switches shall have Layer2 and Layer3 capability.
10. MDF switches shall provide enough 1000SX ports to connect all TC's in the building with at least two spare ports at startup.
11. Each TC shall have at least one home-run gigabit fiber connection to the MDF.
12. Each designated LAB, Classroom, Office and other user space shall access the network via the nearest Telecommunications Closet (TC).
13. Each designated LAB location shall have at least one-gigabit fiber connection to the nearest TC and at least 24 - 10/100TX ports for user attachments.
14. Each designated Classroom shall be supported by at least six active 10/100TX ports in the nearest TC.
15. Each designated Office and other space shall be supported by at least two active 10/100TX ports in the nearest TC.
16. The detailed design for the EPISD infrastructure has been done and implemented. This design includes the EPISD school locations and facilities. The equipment to be installed at these locations is described in Appendix C.
17. The WAN Infrastructure to all locations is in place and consists of at least a separate T1 link for Video signal / content transport.
18. EPISD has the documentation and statistics about the current environment, which will form the basis for IBM's review of the existing detailed network design.
19. The services provided under this SOW will be performed on-site at EPISD locations and off-site, at IBM location(s).
20. Clear rack spaces will be provided for the equipment installation.

2.3 IBM Responsibilities

2.3.1 Project Coordination Services

The purpose of this activity is to provide an IBM Project Coordinator who will establish a framework for project communications and reporting of contractual activities.

We will:

1. Review the SOW, and any associated documents, with your Project Coordinator;
2. Establish and maintain project communications through your Project Coordinator;
3. Review and administer the Project Change Control Procedure with your Project Coordinator;
4. Develop a Project Plan;
5. Measure, track and evaluate progress against the Project Plan;
6. Resolve deviations from the Project Plan with your Project Coordinator;
7. Coordinate and manage the technical activities of our project personnel;
8. Conduct regularly scheduled meetings with your project team to review project status; and
9. Prepare Status Reports every month.

Completion Criteria:

This task is complete when the tasks under "IBM Responsibilities" have been completed including the delivery of any deliverable materials.

Deliverables/Documentation:

- Status Report/Documentation

2.3.2 Reverify Video Solution Requirements

The purpose of this activity is to collaborate with EPISD professionals to verify and update Video requirements for the IBM Video Solution. This activity is necessary because of the dynamic nature of the education industry, where classroom techniques change. Development of a current list of requirements will affect the final design of the solution.

Completion Criteria:
This task is complete when the IBM Project Coordinator delivers a hardcopy document describing the current Video Solution Requirements to the EPISD Project Coordinator.

Deliverables/Documentation:

- Video Solution Requirements Document

2.3.3 Video Network Design Review

The purpose of this activity is to review the Video Network Design so that an Implementation Plan with a schedule can be developed and agreed upon. Our performance of these activities is based upon the review of the needs of the El Paso Independent School District and a review of the current network infrastructure documentation we receive from the district.
We will:

1. Review and document the Video Network Design.

Completion Criteria:
This task is complete when the IBM Project Coordinator delivers a document describing the facts and findings from the Video Network Design Review to the EPISD Project Coordinator.

Deliverables/Documentation:

- Video Network Design Document

2.3.4 Implementation Plan Creation

The purpose of this activity is:

1. Create a Video Solution Implementation Plan detailing the specific steps required to migrate from your existing network to a video network using the detailed Video Network Design;
2. Document network addressing, quality of service, bandwidth requirements, etc. for implementing the video network at up to ninety (90) locations in the EPISD network;
3. Create a video network test plan;
4. Create an implementation schedule;
5. Document operational requirements for managing the video network;
6. Create and deliver the Implementation Plan.

Completion Criteria:

This task is complete when the IBM Project Coordinator delivers an Implementation Plan describing the activities, tasks, resources required to implement the IBM Video Solution in the EPISD environment to the EPISD Project Coordinator.

Deliverables/Documentation:

- Implementation Plan for the IBM Video Solution

2.3.5 Video Network Implementation

2.3.5.1 Implement IBM Video Solution

We will:

1. Implement the IBM Video Solution in accordance with the Implementation Plan.

Completion Criteria:

This task is complete when we have implemented the IBM Video Solution in the EPISD environment as described in the Implementation Plan for the IBM Video Solution.

Deliverables/Documentation:

- None

2.3.5.2 Validate Video Network and Operation

The purpose of this activity is to validate the Video network implementation.

We will:

1. Execute the validation test plan as documented in the "Implementation Plan" activity and perform necessary steps to ensure conformance to the design; and

2. Create a Video Network Operational Guidelines document for the ongoing operation of the new network and video infrastructure.

Completion Criteria:

This task is complete when a hardcopy of the Video Network Validation Report and a hardcopy of the Video Network Operational Guidelines have been delivered to the EPISD Project Coordinator.

Deliverables/Documentation:

- Video Network Validation Report
- Video Network Operational Guidelines

2.4 EPISD RESPONSIBILITIES

The responsibilities listed in this section are in addition to those responsibilities specified in the *Agreement* and are to be provided at no charge to IBM. IBM's performance is predicated upon the following responsibilities being fulfilled by EPISD.

2.4.1 Project Management Coordination

Prior to the start of this SOW, you will designate a person (called "your Project Coordinator"), to whom all our communications will be addressed and who has the authority to act for you in all aspects of the project. Your Project Coordinator will:

1. Serve as the interface between our project team and all of your departments participating in this project;
2. Obtain and provide information, data, decisions and approvals, within three (3) business days of our request, unless we mutually agree to an extended response time;
3. Ensure the appropriate personnel for your activities, described in this SOW, are made available by your organization;
4. Participate in status meetings with the project team, as required;
5. Help resolve project issues, and escalate issues within your organization, as necessary; and
6. Provide suitable office space, supplies, furniture, and other facilities (including analog telephone access) for our personnel while working on your premises.

2.5 Deliverable/Documentation Materials

The following Type II items will be delivered to EPISD under this Statement of Work:

- Status Report
- Video Solution Requirements Document
- Video Network Design Document
- Implementation Plan for the IBM Video Solution
- Video Network Validation Report
- Video Network Operational Guidelines

2.6 Completion Criteria

IBM shall have fulfilled its obligations under this Statement of Work when any of following first occurs:

- IBM accomplishes the IBM tasks described under "IBM Responsibilities" including delivery to EPISD of the materials listed under "Deliverable/Documentation Materials"
- Notwithstanding any other provision, the District has the right to terminate this agreement for business reasons if termination notices are given to IBM prior to any work being performed or service provided.
- Either of us terminates according to the provisions of the *Agreement*.
- Project End Date is reached

2.7 Estimated Schedule

The estimated schedule for this effort is 12 months from the date of project initiation.

Project Start Date:	July 1, 2001
Project End Date:	June 30, 2002

Work will begin July 1, 2001, given that EPISD receives adequate funding for the project.
The schedule shall be consistent with the completion dates identified by the EPISD and agreed to by IBM. Reasonable effort shall be made by IBM and EPISD to keep the schedule dates intact.

IBM will not be responsible for delays or additional requirements imposed by any government agencies. The IBM will not be responsible for delays caused by delays in project funding, labor disputes, fire, unavoidable casualties, or unforeseen conditions.

2.8 Charges

The Services Charge stated here represents the maximum allowable charges for all services that may be provided under this Statement of Work. IBM understands that the decision to implement this project is contingent upon award to the District of funding under the E-rate program. IBM will not begin work on this project without written notification from EPISD that funding has been approved and that work should begin. If such notification has not been received by December 31, 2001, at IBM's option, IBM may terminate this Statement of Work or implement an extension of this Statement of Work, as well as changes in pricing or other terms and conditions as may be required, via the Project Change Control Procedure outlined in Appendix A.

This amount may be extended upon mutual agreement between EPISD and IBM as defined in the section titled Project Change Control Procedure.

Total Services Charge . . . . . **$ 4,374,054**, including travel and living expenses.

For purposes of applying for FCC Snowe-Rockfeller E-rate funding, the following breakout is provided.

A) E-rate Eligible Portion..... $ 4,374,054

B) Non-Eligible Portion..... $ 0.00

E-rate Invoicing: Prior to commencing work, IBM requires:

1) a fully signed contract signature sheet:

2) a P.O. in the amount that the E-rate program is not funding (e.g. non-discounted portion of the eligible costs plus the non-eligible costs), and;

3) a copy of the E-rate funding approval letter.

As a service to the school, IBM will perform dual billing per E-rate terms and conditions. First, IBM will invoice the school monthly, as work is completed, for the 'non-discounted' portion of the ELIGIBLE items. Secondly, under separate invoice, IBM will invoice the E-rate FCC Snowe-Rockefeller administration for the remaining discounted portion of the ELIGIBLE items. Payment is due as specified in the invoice. Please note that although IBM will only bill the school for those charges not eligible under the E-rate program, the school assumes responsibility for the entire contract services charge. Not withstanding any other provision, the District has the right to terminate this agreement for business reasons if written termination notice is given to IBM prior to any work being perform or service provided.

Excluded from the Services Charge are items involving, but not limited to; repairs to the Location for correcting existing code deficiencies, painting, asbestos removal, plumbing, heating and ventilation, air conditioning work, etc.

IBM Service Provider Identification Number (SPIN): 143005607.

This offer will be withdrawn if IBM is not authorized to perform these Services by December 31, 2001.

APPENDIX A. PROJECT CHANGE CONTROL PROCEDURE

The following provides a detailed process to follow if a change to this Statement of Work (SOW) is required.

When both of us agree to a change in this Statement of Work, we will prepare a written description of the agreed change (called a "Change Authorization"), which both of us must sign. The Change Authorization will describe the change, the rationale for the change, and specify any change in the charges, estimated schedule, or other terms. Depending on the extent and complexity of the requested changes, we may charge for our effort required to analyze it. When charges are necessary in order for us to analyze a change, we will give you a written estimate and begin the analysis on your written authorization. The terms mutually agreed upon Change Authorization will prevail over those of this Statement of Work or any previous Change Authorization.

APPENDIX B. DELIVERABLES/DOCUMENTATION GUIDELINES

B– 1: Status Reports/Documentation

Content:

Each status report will consist of the following, as appropriate:

1. Activities performed during the reporting period
2. Activities planned for the next reporting period
3. Hours summary
4. Project change control summary
5. Problems, concerns, and recommendations

Delivery:

A Status Report will be delivered every month for the duration of the project. One (1) copy of the report, in reproducible format, will be delivered to your Project Coordinator within five (5) business days following the reporting period.

B- 2: Current Video Solution Requirements Document

Content:

This document will contain a list of requirements that the IBM Video Solution must satisfy to meet the needs of EPISD educators and students.

Delivery:

One (1) copy of this document will be delivered to the EPISD Project Coordinator at the completion of the "Reverify Video Solution Requirements" activity.

B- 3: Video Network Design Document

Content:

This document will provide the Detailed Video Network Design and Implementation Plan as a guide for the deployment of the Video network design. Included in this document will be:

1. Device location
2. Device interface data (i.e. speeds, CIR, etc.)
3. Device unique configuration data (i.e. TCP/IP address information, window size, etc.)
4. Test / Validation Plan

Delivery:

One (1) hard copy of the Detailed Video Network Design Document will be delivered to your Project Coordinator within ten (10) business days following the completion of the "Video Network Design Review" activity.

B - 4: Detailed Implementation Plan for IBM Video Solution Document

Content:

This document will provide the Detailed Implementation Plan for transitioning to the IBM Video Solution in the EPISD environment. The Implementation Plan will be used as a guide for the deployment of the Video network design. Included in this document will be:

1. Device location
2. Device interface data (i.e. speeds, CIR, etc.)
3. Device unique configuration data (i.e. TCP/IP address information, window size, etc.)
4. Test / Validation Plan

Delivery:

One (1) hard copy of the Detailed Implementation Plan for the IBM Video Solution will be delivered to your Project Coordinator within ten (10) business days following the completion of the "Implementation Plan Creation" activity.

B– 5: Video Network Validation Report/Documentation

Content:

This document will provide facts, findings and recommendations from our review and testing of the implemented video network. It will include:

1. Functional test results obtained from testing the solution functions against the current list of requirements for the IBM Video Solution.
2. Recommendations for modifications to the solution.

Delivery:

One (1) hard copy of the document will be delivered to your Project Coordinator within ten (10) business days following the completion of the "Validate Video Network and Operation" Activity.

B– 6: Video Network Operational Guidelines/Documentation

Content:

We will provide the Video Network Operational Guidelines to help you to manage and control the new, environment effectively. The report will contain:

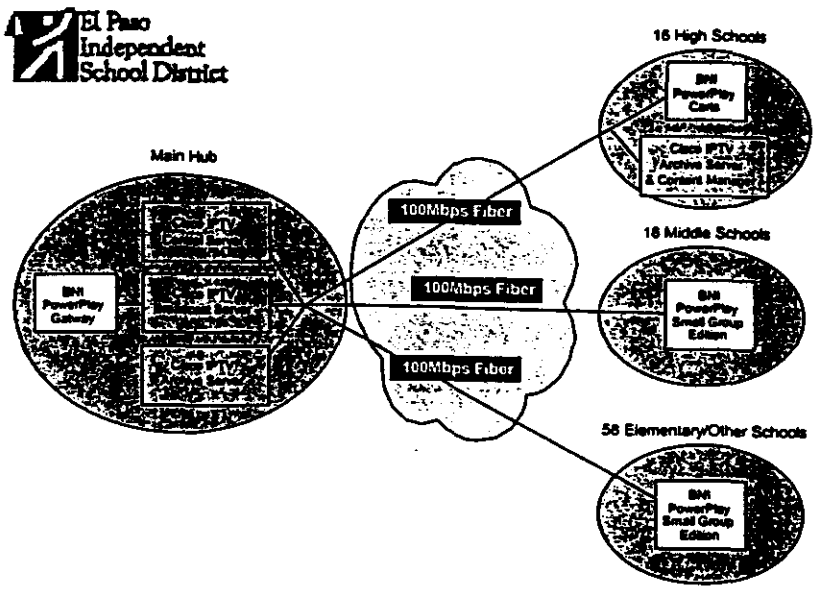
1. Organizational and responsibility suggestions to support the Video Network environment
2. Problem determination and problem source identification techniques
3. Reference materials and education suggestions

Delivery:

One (1) hard copy of the document will be delivered to your Project Coordinator within ten (10) business days following the completion of the "Validate Video Network and Operation" activity.

APPENDIX C. IBM VIDEO SOLUTION DESCRIPTION

C-1 EPISD Locations



90 TotalSites

Exclusions: This solution does not provide for carts, cameras, monitors, microphones, training or speakers. EPISD will have to provide this equipment at the video conferencing locations. The IBM End-to-end Video Solution that will provide EPISD classroom locations with Video Broadcasting, Video On-Demand, and Video Conferencing capabilities leverages video components from several IBM Partners to provide an innovative solution.

The Cisco Systems Solution Component provides Video Broadcast and Video on Demand capabilities to the classroom locations, while the BNI PowerPlay Solution Component provides Video Conferencing capabilities to the same locations. Together, these components work together to provide state-of-the-art, field-proven distance learning functionality.

Key features of the Cisco Systems, Inc. component include:

A. Cisco Systems IP/TV Solution – The Cisco IP/TV product line is and end-to-end, complete network video solution. It combines the high-performance line of Cisco IP/TV 3400 Series Servers preconfigured with robust IP/TV server software and IP/TV client software for desktop PCs.

The Cisco IP/TV product line is three video solutions in one, supporting live video, scheduled video, and video on demand (VOD). Distinguished by its feature-rich software, the IP/TV solution combines TV-quality streaming video and application and management features with scalability and the bandwidth efficiencies required for large enterprise deployment.

The Cisco IP/TV solution embraces the Cisco AVVID, Architecture for Voice, Video and Integrated Data, which provides a framework to combine all communications into a single infrastructure and delivers full multiservice solutions to customers. The Cisco IP/TV solution, like all Cisco AVVID solutions, offers manageability, reliability, industry standards, enhanced productivity, high availability, and reduced costs

B. Cisco Systems IP/TV Benefits -

E-Learning – When you use the IP/TV solution, you give your staff access to the highest-quality education available. Anyone in your organization can learn from experts around the world, without leaving the office.

Ease of Use and Program Access – The IP/TV Viewer, with a customizable user interface, makes it easy to find, select, and view programs at convenient times. It offers a program listing and separate window for program viewing.

Program selection – From a listing of scheduled and on demand programs, viewers can easily select programs.

Availability of IP/TV programs and Microsoft Windows Media programs – A single IP/TV viewer can list and display both IP/TV programs and Windows Media programs.

Search capabilities – Using key words, a search function can scan thousands of programs to help viewers quickly find the selections.

Program viewing – With point-and-click simplicity, the requested program appears in a separate viewing window.

Viewer options – Users can resize windows to full screen, view multiple programs simultaneously, use VCR-like controls, create a favorites list and playlist of selections to view back to back, short programs by day of the week or access online help.

View playlist – Users can create a personalized list of VOD programs which play in a user-defined order.

EPISD has 3 sites served by Century Telephone that present challenges in providing distance learning. These 3 sites don't have enough bandwidth to provide realtime video conferencing via BNI's PowerPlay products - or anyone else's videoconferencing system. These sites have a 56K line provided through Century Telephone and GMCS' desire is to at least provide a delayed ability to view classes generated at other sites in the rest of network work. IBM proposes to use the Cisco IP/TV system to record real-time

classes in the high speed portion of the WAN, download to an archive server at each of the affected schools overnight and allow the students at those three schools to view the classes the next day. This would not be an interactive video conference but does allow those sites to gain access to the information.

This solution utilizes video group and desktop equipment to control the programming, distribution, and selection of video conferencing broadcast and would work as follows:

1. A desired class would be video conferenced into a BNI gateway.
2. The BNI gateway would feed an NTSC signal into the IP/TV Broadcast Server.
3. The Broadcast Server (used for distribution and selection) would then save the file on its hard drive in the appropriate format.
4. The desired material would be downloaded to the bandwidth challenged school's local IP/TV Archive Server each night.
5. The materials would be viewed by the students the following day.

This solution shown in the diagram above describes the minimum system that would allow this application to be delivered. It has the limitation of only being able to record a single concurrent BNI conference, but it has been designed specifically for scalability. The addition of more Broadcast Servers (with corresponding BNI Gateways) would allow multiple simultaneous video conferences to be recorded.

Because the BNI Gateway does not have the ability to control the IP/TV system, the BNI solution conference and the IP/TV recording sessions will have to be setup individually. IBM has assumed that the logical architecture through the various teleco "clouds" is a star topology. It will be necessary to configure the network devices.

This solution has the added benefit of being able to provide media retrieval of both PowerPlay conferences and other stored materials to all 33 of the BNI stations in the network. This is an educational tool that is currently being installed in more and more school districts across the United States.

Exclusions: Note: This solution does not provide for carts, cameras, monitors, microphones, training or speakers. EPISD will have to provide this equipment at the video conferencing locations. The IBM End-to-end Video Solution that will provide EPISD classroom and administration locations with Video Broadcasting, Video On-Demand, and Video Conferencing capabilities leverages video components from several IBM Partners to provide an innovative total solution.

Quantity	Description	P/N
1	Control Server	Cisco IP/TV 3411
2	Broadcast Server	Cisco 3423
17	Archive Server	Cisco 3431
16	Content Engine	Cisco 4650

To provide the Video Conferencing capability, IBM has chosen BNI, Inc. suite of products called PowerPlay. This product integrates nicely with Cisco (BNI is a Premier Cisco Partner) and this product is widely used in education.

APPENDIX D. BROADBAND NETWORKS, INC. (BNI) PRODUCT LINE FOR VIDEO CONFERENCING

D- 1: Overview of BNI

Company Background and Experience:

Broadband Networks, Inc. (BNI) designs, manufactures and integrates networking solutions for video and data applications. For this solution, BNI is providing video group and desktop equipment used to control the programming, distribution, and selection of video conferencing broadcast.

The company's video group and desktop equipment used to control the programming, distribution, and selection of video conferencing broadcast and is known as PowerPlay™, which PowerPlay provides the capability for full motion, multi-point video conferencing with data collaboration and device control over any standards based high bandwidth network. This IP based H.323 solution provides far superior performance than any other competitive product available today.

D - 2: Overview of PowerPlay™

PowerPlay is an IP based H.323 digital multimedia video conferencing solution which is designed for a wide range of applications that require high quality interactive video, audio and data communications. . PowerPlay is a standards-based solution that will operate over any properly configured Ethernet, ATM or SONET network.

PowerPlay provides the capability for true multipoint conferencing. Up to eight users can participate in an interactive conference, including four continuous presence video and audio participants and four audio only participants. PowerPlay delivers extremely high quality video and audio. The video performance is full motion (30 fps) with full CIF resolution for each participant. The audio is facilitated by the lowest system latency in the industry at less than 150 ms and is supported by a variety of high performance echo canceling techniques.

D - 3: Description of the Video Viewing Station

PowerPlay comes configured and tested for video conferencing.

D - 4: Description of the NTSC Gateway

The PowerPlay NTSC Gateway is a universal gateway to any other video platform that supports NTSC inputs and outputs (which most do). The customer would purchase this product, and connect it to a customer owned codec. This creates a "meet-me" gateway in which users can "dial" the gateway and exchange audio and video to the foreign network.

School Districts can use a NTSC gateway to interface to existing H.320 gear. Connecting this device to an H.320 endpoint, such as a PictureTel, PolyCom or VTEL station will create a gateway and will allow for outside H.320 users to call the customer's H.320 station to meet an H.323 multipoint conference.

D - 5: Description of the Integration of PowerPlay and Cisco's IP/TV

BNI provides video streaming technology through the resale of Cisco Systems IP/TV technology. This system consists of one or more servers onto which source video materials may be stored. This stored material is then available "on-demand" through the IP based network to client software packages loaded onto PCs.

The IP/TV system makes use of both the standard IGMP management of multicast groups as well as the optimized CGMP management of multicast traffic through Cisco's layer two Ethernet switching devices. These features help to ensure that network use is optimized.

Video streams can be multicast throughout the WAN as desired. Video streams can be allowed through the WAN's firewall, allowing users on the Internet access to the streamed video.

Installing a PowerPlay NTSC Gateway adjacent to the IP/TV Server creates a bridge between PowerPlay and IP/TV. Connecting the output of the NTSC Gateway with the input of the IP/TV Server allows for the user to record a PowerPlay Conference for later playback or simultaneous streaming.

Once completed, any user on the customer's network can use the IP/TV viewer application to view the stored PowerPlay Conference. The view would be one single image, likely in MPEG-1 format that would be the complete conference.

D - 6 PowerPlay™ Equipment for EPISD Pilot

BNI's Technical specifications for the video group and desktop equipment is:

Qty	Product
16	PWP-WS-T
74	PWP-WS-SGE
2	PWP-GW-NTSC
16	PWP-2074-FPS
1	PWP-NS
16	PWP-SB60

The configuration above is recommended based upon the number of identified sites. Each site will have one mobile cart. A network gateway is recommended so that users inside the EPISD network can conference with remote networks that are using standards based conferencing methods, like ISDN-based H.320. This is fairly common with one school district talking to other districts or visiting popular locations such as the Smithsonian Institute or NASA.

APPENDIX E. SIGNATURE PAGE

IBM Statement of Work for Product Support Services

Custom Services

IBM (we) will provide, and EPISD (you) agree to accept, IBM Services (Services) for "Video Solution and Installation Services" under the terms and conditions of the IBM Customer Agreement and this Statement of Work.

For Scope of Services, Completion Criteria, Charges and other applicable terms refer to the IBM Proposal for the provisions of EPISD "Video Solution and Installation Services", dated January 18, 2001.

This proposal will remain valid through December 31, 2001.

Total Charges: **$ 4,374,054, which includes travel and living.**

Both of us agree that the complete agreement between us regarding these Services will consist of 1) this Statement of Work and 2) the IBM Customer Agreement (or any equivalent agreement signed by both of us).

Agreed to: El Paso Independent School District	*Agreed to:* International Business Machines Corporation
By _____ (Authorized Signature)	By _____ (Authorized Signature)
Name Yinuo Du (type or print)	Name 1-18-01 (type or print)
Date 1-18-1	Date 1-18-01

Customer Number: 2760555	IBM Customer Agreement No. NB8C298
Customer Address: El Paso Independent School District 6531 Boeing Dr. El Paso, TX 79925	IBM Office Address: 4487 North Mesa El Paso, TX 79902

Project name or identifier:	EPISD Video Solution and Installation Services
IBM Office Number:	TDC
Start Date:	July 1, 2001
End Date:	June 30, 2002

IBM

STATEMENT OF WORK FOR

EL PASO INDEPENDENT SCHOOL DISTRICT

FOR

IBM'S WEB ACCESS FOR A SCHOOL COMMUNITY SOLUTION

JANUARY 18, 2001

STATEMENT OF WORK

Statement of Work - Introduction

This section describes the Services that IBM will provide under the terms of the IBM Customer Agreement (ICA) and this Statement of Work (SOW). Specifically, IBM will provide El Paso Independent School District (El Paso ISD) with a set of customized services. The details of the Services to be provided are described in this section. These Services will be provided at existing and newly built El Paso ISD locations in El Paso, Texas.

This Statement of Work is comprised of the following sections:

1.0 Assumptions

2.0 IBM Responsibilities

3.0 El Paso ISD Responsibilities

4.0 Deliverable Materials

5.0 Project Schedule

6.0 Completion Criteria

7.0 Charges

8.0 Project Warranty

The following are incorporated in and made part of this Statement of Work:

Appendix A, Deliverable Guidelines

Appendix B, Project Change Control Procedure

Appendix C, Equipment and Software

Appendix D, Signature Page

Changes to this Statement of Work will be processed in accordance with the procedure described in Appendix B, "Project Change Control Procedure." The investigation and the implementation of changes may result in modifications to the Schedule, Charges or other terms of this Statement of Work.

This proposal will expire December 31, 2001 unless this date is extended by IBM in writing.

1.0 Assumptions

This Statement of Work and IBM's estimates to perform the Statement of Work are based on the following assumptions. Deviations that arise during the proposed project will be managed through the procedure described in Appendix B, "Project Change Control Procedure."

1. The El Paso Independent School District will designate a person to act as the El Paso Independent School District Project Coordinator who will be involved from the initiation of the project and will be accessible to IBM. This person will have responsibility for day-to-day project activities and will be responsible for the duties outlined in the "*El Paso Independent School District Responsibilities*" section of this Statement of Work.
2. The El Paso Independent School District will provide IBM access to all pertinent records, reports, and information necessary to carry out its duties in completing this Statement of Work.
3. The El Paso Independent School District will provide all necessary personnel to fulfill the requirements outlined in the "*El Paso Independent School District Responsibilities*" section of this Statement of Work as well as all office supplies and word processing resources.
4. The El Paso Independent School District will sign necessary software licenses and software central support agreements with all vendors identified by IBM.
5. All subcontractors used to fulfill the responsibilities of IBM in this contract will be identified to the El Paso Independent School District.
6. IBM is committed to and has a long history of upholding equal employment opportunity. Its many programs and yearly reviews help ensure there is no discrimination against any employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment or any matter directly or indirectly related to employment, because of race, religion, color, sex, disability, national origin, or ancestry. IBM and its subcontractors will uphold the same practices in their performance of this Statement of Work.
7. IBM will work collaboratively with the El Paso Independent School District to interpret and comply with the requirements of State Code. The El Paso Independent School District will not approve this Statement of Work or any change authorization(s) to this Statement of Work unless it is in compliance with applicable laws and regulations. Approval by the El Paso Independent School District of this Statement of Work and any change authorization(s) to this Statement of Work will constitute confirmation by the El Paso Independent School District that the work to be performed by IBM is in compliance with applicable laws and regulations.
8. The El Paso Independent School District will select and secure services from an Internet services provider for Internet access, prior to the start of the engagement.
9. Each school participating in the IBM's Web Access for a School Community implementation will have at least a T-1 connection from the El Paso Independent School District's wide area network to the selected Internet Services provider.
10. Each participating teacher or staff member will have access to either a Power Mac or a PC with at least a Pentium processor, 32 MB of RAM, 1 GB hard drive, CD ROM drive,

and connection to the location's local area network. Each machine must have either Netscape 4.05 or higher, Netscape Communicator 4.06 or above, or Internet Explorer 4 Service Pack 1 (4.72.3110.8) or above, including Java support.

11. This Service does not address the capability of your systems to handle date data within and between the twentieth and twenty-first centuries. You acknowledge that it is your responsibility to assess your current systems and take appropriate action to migrate to Year 2000 ready systems. Please refer to IBM Product Specifications or IBM's Internet venue at http://www.ibm.com/year2000 to determine whether IBM Products are Year 2000 ready.
12. IBM retains the right to terminate this Statement of Work before full implementation if the commitments of the El Paso Independent School District are not met.
13. It is understood that IBM retains the intellectual property rights to IBM's Web Access for a School Community, which it developed, and any new adaptations of IBM's Web Access for a School Community made by IBM or intellectual property developed by IBM as a result of this Statement of Work. IBM will grant the El Paso Independent School District a license to use IBM's Web Access for a School Community for one (1) year, as developed under the scope of this Statement of Work.
14. The El Paso Independent School District will assume responsibility for negotiating any necessary changes in operating procedures, work rules, site organization, etc. with the appropriate authorities, as well as any relevant collective bargaining units, to ensure smooth implementation and adoption of IBM's Web Access for a School Community.
15. Work under this Statement of Work will be performed at the El Paso Independent School District sites as well as at IBM and/or subcontractor premises.
16. The El Paso Independent School District will be responsible for any overtime pay that may be required for its personnel to oversee IBM's and its subcontractors' activities related to this project when agreed to work is performed outside the standard business day.

Exclusions from this Statement of Work

1. IBM is not responsible under this SOW for the identification or correction of any existing safety and/or code violations, whether federal, state or local, including but not limited to fire and electrical codes. If IBM should discover any safety and/or code violations during the course of this project, IBM will notify El Paso ISD of the problem. IBM will not be required to proceed with its work under this SOW until El Paso ISD remedies such violation, nor will IBM be responsible for delays to the work caused by such violation.
2. On-going network operations and Coordination are not included in this Statement of Work. IBM would be pleased to respond to El Paso ISD for the addition of these services.
3. Relocation and testing of existing computers, telecommunications, or CCTV equipment(s) or systems are not required.
4. Removal of existing telecommunications or CCTV cabling is not required.
5. No data Media Converters are being supplied by this Statement of Work.

6. Installation of any hardware, software, and network electronics not specified in this SOW (e.g., workstations, servers, printers, routers, DSUs/CSUs, repeaters, modulators) is the responsibility of El Paso ISD.
7. It is understood by El Paso ISD and IBM that all matters relating to physical construction of new wiring closets/equipment locations and retrofits for existing wiring closets/equipment locations, (general construction buildout, HVAC, electrical, lighting, construction permits) is the responsibility of El Paso ISD.

2.0 IBM Responsibilities

2.1 Perform Project Services

Task Description: The objective of this task is to establish a framework for project communications, reporting, procedural, and contractual activity. The following sub-tasks will be performed:

- Review this Statement of Work and the contractual responsibilities of both parties with the El Paso Independent School District Project Coordinator.
- Prepare a Detailed Installation Plan which identifies and assigns tasks, major benchmarks for the efforts of the project team, and the dates on which they will occur.
- Coordinate the establishment of the project environment.
- Develop a change control plan.
- Develop a status reporting plan.
- Schedule and meet with the project implementation team including the El Paso Independent School District and IBM personnel.
- Project Tracking and Reporting
- Measure, track, and evaluate progress against the project plan.
- Resolve deviations from the project plan with the El Paso Independent School District Project Coordinator.
- Review project tasks, schedules, and resources and make changes or additions, as appropriate.
- Conduct regularly scheduled meetings with the El Paso Independent School District Project team to review project status.
- Prepare Monthly Written Status Reports.
- Administer the project change control procedure.
- Review and analyze project change requests.

Completion Criteria: IBM will have completed its responsibilities when the IBM tasks described in this section have been completed and the Detailed Project Plan and the final